

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P913254

Luminaire Tested: DFN2DIP-4P4F0-050D080US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913254
REPORT IS A COMBINATION OF REPORTS P899143 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D080US927-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

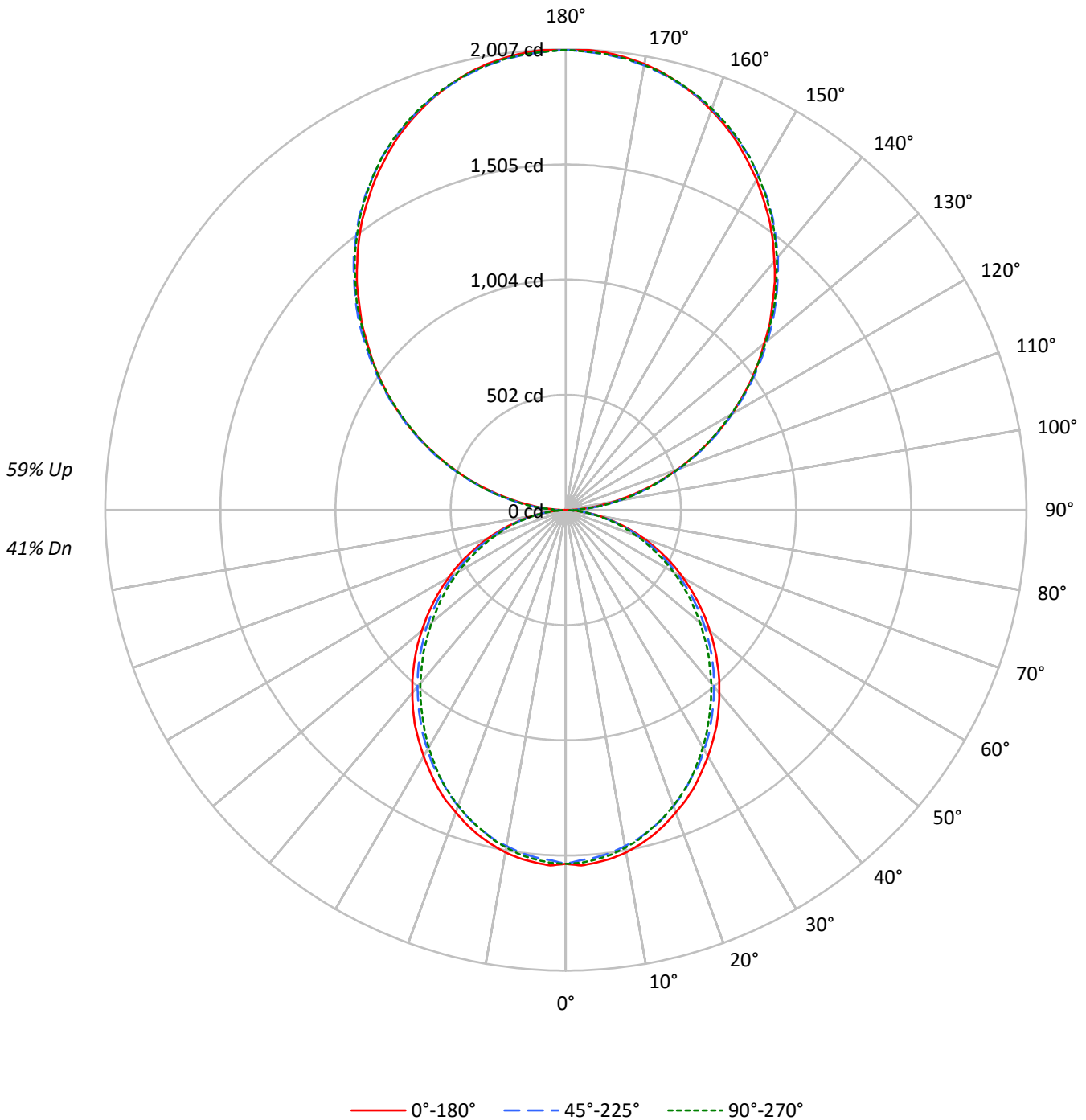
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9529.9 lumens
Efficiency: N/A
Efficacy: 77.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 123.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48	48	48	48	41
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41	41	41	41	35
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34	34	34	34	29
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29	29	29	29	25
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25	25	25	25	21
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22	22	22	22	18
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19	19	19	19	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	14
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15	15	15	15	13
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14	14	14	14	12
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13	13	13	13	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1000	1000	1000
5°	1002	986	993
10°	994	973	980
15°	979	958	959
20°	959	936	938
25°	940	909	914
30°	915	885	882
35°	892	856	849
40°	863	827	818
45°	835	798	786
50°	804	767	748
55°	771	731	714
60°	734	689	675
65°	694	646	629
70°	643	593	579
75°	572	529	534
80°	486	449	447
85°	353	308	302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1517 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	1.5
10°-20°	408.1	4.3
20°-30°	599.8	6.3
30°-40°	696.6	7.3
40°-50°	695.8	7.3
50°-60°	606.7	6.4
60°-70°	448.5	4.7
70°-80°	253.7	2.7
80°-90°	72.7	0.8
90°-100°	124.0	1.3
100°-110°	394.1	4.1
110°-120°	674.4	7.1
120°-130°	886.9	9.3
130°-140°	995.5	10.4
140°-150°	976.2	10.2
150°-160°	818.9	8.6
160°-170°	543.1	5.7
170°-180°	189.8	2.0
0°-30°	1153.0	12.1
0°-40°	1849.6	19.4
0°-60°	3152.1	33.1
0°-90°	3927.0	41.2
90°-120°	1192.5	12.5
90°-150°	4051.1	42.5
90°-180°	5603.0	58.8
0°-180°	9529.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	2	22	59	56	57	9
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	



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CATALOG NUMBER: DFN2DIP-4P4F0-050D080US927-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	6.42	7.20	7.45	8.24	9.63	5.97	6.76	7.00	7.80	9.19
	3H	8.08	8.78	9.12	9.83	11.24	7.59	8.29	8.63	9.34	10.75
	4H	8.66	9.33	9.72	10.38	11.80	8.17	8.84	9.22	9.89	11.31
	6H	9.07	9.68	10.13	10.73	12.16	8.57	9.18	9.63	10.23	11.66
	8H	9.17	9.76	10.24	10.83	12.25	8.67	9.26	9.73	10.32	11.75
	12H	9.22	9.78	10.29	10.84	12.29	8.71	9.27	9.78	10.33	11.78
4H	2H	6.87	7.54	7.93	8.59	10.00	6.52	7.18	7.57	8.23	9.65
	3H	8.74	9.29	9.80	10.37	11.80	8.33	8.89	9.39	9.96	11.39
	4H	9.45	9.96	10.52	11.03	12.48	9.03	9.54	10.10	10.61	12.06
	6H	9.97	10.41	11.05	11.50	12.94	9.54	9.97	10.62	11.06	12.51
	8H	10.12	10.53	11.20	11.61	13.07	9.68	10.09	10.76	11.17	12.64
	12H	10.19	10.56	11.29	11.66	13.13	9.74	10.11	10.84	11.21	12.68
8H	4H	9.64	10.05	10.72	11.14	12.60	9.27	9.68	10.35	10.76	12.22
	6H	10.28	10.62	11.38	11.74	13.20	9.89	10.23	11.00	11.36	12.82
	8H	10.50	10.80	11.61	11.90	13.38	10.11	10.41	11.22	11.51	12.99
	12H	10.63	10.90	11.75	12.00	13.52	10.22	10.48	11.34	11.59	13.10
12H	4H	9.62	10.00	10.72	11.09	12.56	9.26	9.63	10.36	10.72	12.19
	6H	10.31	10.61	11.42	11.71	13.19	9.94	10.23	11.05	11.34	12.82
	8H	10.55	10.81	11.66	11.91	13.43	10.17	10.43	11.28	11.53	13.05